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Applying a basic development needs approach for sustainable and integrated community development in less-developed areas: report of ongoing Iranian experience

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Summary *Introduction*. Despite considerable achievements in the provision of basic developmental facilities in terms of drinking water, access to primary healthcare services, high-quality and nutritious food, social services, and proper housing facilities, there are many rural and slum communities in Iran where these essential needs remain unfulfilled. Lack of equity is prominent, as large differences exist in underprivileged provinces. New policies developed in the past two decades have resulted in substantial achievements in meeting population needs and reducing the socio-economic gap; nevertheless, poverty levels, unemployment due to a large increase in the birth rate in the early 1980s, and lack of community participation are matters yet to be addressed. To overcome these deficiencies, a basic development needs approach was adopted to promote the concept of community self-help and self-reliance through intersectoral collaboration, creating an environment where people could take an active part in the development process, with the Iranian government providing the necessary support to achieve the desired level of development.

Description of the project. Following firm commitment from the Iranian government and technical support from the World Health Organization Regional Office, basic development needs was assigned a high priority in health and health-related sectors, reflected in the third National Masterplan (2001–2005).

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A comprehensive intersectoral plan was designed, and pilot projects were commenced in three villages. Each village elected a representative, and committee clusters were formed to run and monitor projects identified by a process of local needs assessment and priority assignment. In each region, a variety of needs were elicited from these assessments, which were actively supported by local authorities.

Lesson learned. A basic development needs approach was found to be a reliable discipline to improve community participation, needs-led resource allocation and intersectoral co-operation in community development, particularly in underprivileged areas. Iran's initial experience of basic development needs has gained widespread public support but will require periodical evaluation as it is introduced into other rural and urban regions across the country.

Introduction

Need

'Need' is an inherently complex concept.[1] Although, principal needs are postulated to be universal among human beings,[2] each sector of the community also has its own specific needs. These must be identified at a local population level to optimize the use of allocated resources. No consensus seems to exist about the meaning and concept of 'need' in health, sociology and political literature.[1,3,4] The ambiguity of the concept of 'needs' and the enormity of the task imposed on practitioners has made the transition from service-led to needs-led much harder;[5] this vagueness is more apparent when a specific need does not fall neatly into 'health care' or 'social care' domains, each of which correlate with the other. Two examples follow. First, patients with a depreciated perception of health status have more social needs;[6] meeting these social needs may have a direct impact on general health status, which falls within the health domain, highlighting the 'holistic nature' of needs.[5] Second, patients need to know the physical course of a disease but may feel guilty bothering a busy general practitioner; this may generate anxiety, leading to deteriorating emotional health.[7,8]

Need has a broad spectrum with a variety of definitions,[2,9,10] but certain needs must be satisfied for a community to develop and flourish. Basic human needs could be attributable to personal physical and mental needs, family needs (such as income, accommodation and birth control)[11] and community needs (such as security and social support).

Identifying these needs requires knowledge of local demography, epidemiology, the effectiveness of proposed interventions and the wishes of local people. A comprehensive approach would incorporate inter alia the views of individuals' perception of needs.[12] Improving accountability is central in 'white papers' and programmes of action in many countries. This could be described as the degree of responsiveness to the 'voice' of the people; their perception of how different services ought to be organized.

The concept of basic development needs

The basic development needs (BDN) approach developed from the observation that many of the problems arising from ill health stem predominantly from poverty and deprivation, which are outwith the health sector domain. This led to a new concept of 'health impact assessment',[13] which requires identifying to what extent social, financial, cultural, technological and other factors impact on health and well being. One important advantage of the BDN approach is the opportunity it affords the local population to express an opinion on these issues.

Satisfying basic needs of health, education, income security and accommodation has been discussed for decades.[14] The BDN approach, developed in the 1970s by United Nations agencies,[15] indicates a basic level of social services required for independence. In other words, the BDN approach aims to fulfill basic needs to develop the local community, and make the individual and the family independent, elevating their health needs in accordance with a hierarchical model,[2,9] which in turn may flourish health needs. This is, therefore, different from the well-known approach to health needs assessment, which identifies the potential for health improvement services to meet ongoing dynamic health needs. The BDN approach aims to fill the gap between the need and supply of minimal social services by promoting the concept of community self-help and self-reliance through local collaboration, creating an environment where

people, supported by government, take an active part in the development of their community.

Non-governmental and grass-roots organizations are proponents of 'community participation' as a means of freeing up public resources for additional projects aimed at improving the quality of life for inhabitants. Satisfying basic needs in deprived areas in various regions of the world[16] has required national legislation in some countries.[17]

The health needs of Iranian residents

The health needs of the Iranian population identified patchy health coverage, phenomenal population growth, and excess mortality and morbidity from infectious disease and poor sanitation as immediate health issues. Substantial efforts led to more equitable health services, birth control, the elimination of vaccine-preventable infectious diseases and improved sanitation.[18,19] To address poverty, the Iranian government targeted underprivileged provinces and areas, allocating resources accordingly. Despite this, poverty remains prominent in some areas.

Considerable progress has been made in meeting basic human needs in terms of the quality of drinking water, nutrition, social services, direct investment and rural building to enhance employment opportunities for the young. Even so, there are many rural and slum communities where these essential needs remain unmet. Indeed, although average health, education and other socio-economic indicators may appear satisfactory, intraprovincial variation indicates that these improvements are not equally distributed.

With many government agencies working in isolation, ignoring the potential of the population and wasting scarce public sector resources, it eventually became evident that the enormity of the task could only be overcome by co-ordinated, well-organized active partnerships with local regions.

The role of the World Health Organization

The Eastern Mediterranean Regional Office for the World Health Organization (WHO–EMRO) has made considerable progress in implementing the BDN concept in many countries of this region.[20] Their proposed BDN guidelines provide general directions and unique standards for optimizing available resources. To date, these have been adopted by 10 countries.[21]

Strong commitment of central government

Political commitment may be weak, a 'diluted, formalized process, tripped up by political volatility of direct popular involvement',[22] or much stronger, offering support focusing on meeting needs and overcoming barriers. The government of the Islamic Republic of Iran made a firm commitment through the third 5-year 'National social, economic and cultural development plan' (2001–2005) to prioritize specific areas for accelerated community development. After a detailed appraisal of previous experience with BDN, an action plan was initiated with active support from the WHO.

Strong commitment of local government

In the aftermath of nationwide local council elections in 1998, local government decision making underwent fundamental change, providing the opportunity to introduce the concept of BDN in particularly indigent areas. Councils were charged with forming partnerships, becoming less centralized and encouraging people to become involved in managing their environment.

Description of the project

Identifying BDN and addressing them is a fundamental role of local government. Despite outstanding improvements in community health indices in Iran,[23–25] there was evidence indicating inequity in resource allocation, distribution of social facilities and, consequently, areas of underdevelopment. These threatened a downward spiral of progressive deterioration, so a specific approach to meet BDN was developed for Iran, in accordance with the WHO guidelines.

Specific criteria to identify pilot sites were agreed after several workshops organized by the WHO–EMRO. These were: (i) localities with an enthusiastic Governor (for entire support and organizational co-ordination); (ii) cultural suitability (no racial or tribal disputes); (iii) easy access for monitoring and administrative support; and (iv) availability (but underutilization) of human and natural resources. The Department of Environmental and Occupational Health, the focal point in

the Ministry of Health and Medical Education for BDN, undertook a range of activities to facilitate the implementation of the BDN process.

Engagement of relevant state departments

The Ministries of Energy, Agriculture, Interior, Education, Co-operation, and Health and Medical Education, Management and Planning Organization (MPO), Department of Environmental Health, and the Housing Foundation formed a partnership to respond collectively to people's identified needs. The Philippines experience with 'minimum basic needs'[17] was considerably simpler as fewer state departments were involved.

Selection of pilot project sites

The most important part of the process was the selection of suitable pilot sites according to certain criteria. These were agreed at several intersectoral workshops organized by the WHO-EMRO.

The BDN intersectoral team undertook field visits and finally selected three suitable provinces: Boushehr (B), Charmahal and Bakhteyari (CB), and West Azarbayejan (WA). The governors and senior managers were briefed. Tables 1 and 2 illustrate the main characteristics of the selected areas. From these areas, districts and villages were chosen according to the abovementioned criteria. A local representative and a district intersectoral team were organized. A 10-day training workshop was held in each province for the intersectoral team, in accordance with BDN guidelines.[20] A field visit was conducted to prepare the community prior to implementation of the project.

Organization of training workshops

Briefing and training workshops were held in the three provinces for different target groups to define the concept, philosophy, approach, procedures and process, planning, implementation and management of the BDN programme, with technical support where necessary from the WHO.

Village organization

Each village was divided into clusters and a cluster representative (CR) was elected. The community selected a village development committee (VDC). CRs and VDC members were trained by the intersectoral team to advise them about the concept of the BDN programme and its methodology, implementation, monitoring and evaluation.

Table 1 Demographic and environmental health indicators in selected regions (2002).

	Provinces			
	WA	B	CB	Country
Population 1992 (×1000)	2276	699	722	55,527
1997 (×1000)	2540	753	765	60,936
2001 (×1000)	2723	787	786	64,528
Population growth rate	1.86	1.24	1.05	1.58
Number of districts	14	8	5	282
Under 5 years mortality rate (per 1000)	31.4	27.9	27.3	32.3
Under 1 year total immunization	84.8	94.9	97	89.7
Sanitary animal waste disposal (%)	9	17	15	21
Sanitary solid waste disposal (%)	9	15	25	24
Access to sanitary latrine (%)	34	68	59	55
Access to public drinking water network (%)	60	58	95	73
Access to drinking water (%)	70	81	98	83
General features of the study sample	WA	B	CB	Total
Number of villages	3	4	3	10
Population	5263	6137	4963	16 723
Number of clusters	48	72	50	160
Mean population within a cluster (SD)	134 (26)	81 (14)	98 (20)	102 (29)

WA, West Azarbayejan; B, Boushehr; CB, Charmahal and Bakhteyari.

Table 2 Socio-economic status in the operational fields compared with national figures.

Province	Literacy rate of children aged 6 years and above						Unemployment rate				Female employment rate					
	Female		Male		Total		Female		Male		Outside house			Inside house		
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Total	Urban	Rural	Total
WA	70.5	53.4	87.7	75.9	79.2	64.6	15.3	6.5	14.4	11.7	9.2	1.9	5.7	3.9	4	3.9
B	83.5	72.5	91	84.4	87.3	78.4	23.8	17.7	19	19.1	9	2.2	5.9	1.6	6	3.5
CB	80.1	67.5	91.7	82.6	85.9	75.2	19.5	20.1	19.5	18.7	10.4	4.5	7.2	13.2	10.7	11.8
Country	81.8	65.4	90.9	79.4	86.4	72.4	25.3	20.3	16.4	16.8	9.1	3.4	7.1	5.1	9.6	6.7

WA, West Azarbayejan; B, Boushehr; CB, Charmahal and Bakhteyari.

Household and community surveys

CRs and VDC representatives, under the supervision of the intersectoral team, collected and analysed baseline household and community surveys which comprised simple needs assessment and semi-structured priority-setting questionnaires. Through these questionnaires, the VDC representatives established the village needs in terms of income generation, cultural, social, leisure, environmental and health issues. An open question allowed respondents to state any other needs. Subsequently, the cluster met to assign a priority to each stated need using a Delphi model.

Community proposals

The community formed proposals based on their identified community needs. Each community developed its own unique range of social and income generation projects.

Final agreed proposal

CRs, VDC members and the intersectoral team in each village reviewed applications and prepared proposals for final selection according to feasibility, cost-effectiveness and potential community benefits. Proposals were forwarded to the Governor's

Box 1 Ten practical steps towards a basic development needs approach

The intersectoral teams implemented the following activities:

1. Village clustering
2. Selection of cluster representatives (CRs)
3. Selection of village development committees (VDCs)
4. Training of CRs and VDCs on household and community surveys
5. Conducting village survey
6. Data analysis at village level
7. Identifying needs in order of priority
8. Designing projects to meet the needs
9. Selection of feasible projects based on human and monetary resources, and appropriate technology
10. Funding projects and starting implementation

office for review. Successful proposals became eligible for financial support.

Pilot project sites

Ten practical steps towards setting priorities in the BDN approach, summarized in Box 1, were identified. The three pilot regions (WA, B and CB), each with diverse geographical, social and health characteristics (Table 1), contained more than 16,000 people in 170 clusters. Region B (Table 1) had a smaller population in each cluster and was better organized, as indicated by the smaller standard deviation.

Identified needs

After reviewing their basic needs, the villagers in each of the three underdeveloped rural areas in Iran identified the three most important areas. These were 'income generation', 'social needs' and 'health needs'.

Income generation

Despite different climatic patterns in the pilot regions, varying from very hot and dry in the south (B) to very cold and mountainous in central (CB) and North–West Iran (WA), villagers shared a common need for the development of small businesses (Tables 3–5).

Prior to the introduction of family planning programmes in 1986,[24] Iran's increasing birth rate had produced a difficult economic situation due to mass unemployment, especially in underprivileged localities. Community participation approaches such as BDN that expressed an interest in developing small businesses freed central government from investing scarce resources in major capital projects to provide work; a tactic utilized in Western countries during periods of recession. This appealed to policy makers who keenly supported the concept of locality-based investment.

Social and infrastructural needs

These mainly refer to infrastructural needs such as safe access (e.g. appropriate bridges across rivers), providing sufficient water for agriculture, cold storage for agricultural products and adequate fuel supply. Social needs included provision of vocational training, preschool playgrounds, building of secondary schools for girls, and recreational facilities and other cultural services for young inhabitants.

Health needs

Several health needs were reported and these were generally related to environmental health issues such as provision of safe drinking water and local sanitation, particularly waste disposal. CRs did not have any concerns about the ability of health services to meet their specific healthcare needs.

Outcome measures

Several outcome measures were considered for this project. First, the impact of the BDN project on

Table 3 West Azarbayejan—Uromieh (villages: Kahriz, Hammamlar, Komlar).

Problems	Needs	Setting priorities
Income generation: unemployment and poverty	Small businesses such as poultry, husbandry, fruit processing	1. Fruit and vegetable market 2. Traditional husbandry 3. Compote and concentration factory 4. Fruit box
Health and social: insufficient water for agriculture	Water for agricultural lands	1. Digging a well for cultivating water
Difficult access across the river	A bridge upon the river	2. Gym
Difficulties in drinking water piped system	Repairing the drinking water piped system	3. Repairing the drinking water piped system
Lack of recreational facilities for the young	Gym	4. Building cold storage
Lack of cold storage	Cold storage for keeping fruits	

Table 4 Charmahal and Bakhteyari (villages: Horeh, Savadjon, Chamkaka and Dashti).

Problems	Needs	Setting priorities
Income generation: higher rate of unemployment	Small businesses such as poultry, fishery, small-scale handcrafts, handmade carpet, cultivation of almond and walnut trees	1. Cultivation of almond and walnut trees 2. Fishery 3. Handcraft workshops 4. Handmade carpets 5. Poultry
Health and social: lack of recreational facilities for the youth	Gym	1. Sanitation of the village environment such as solid waste collection and disposal system
Difficult access to the village, especially in winter	Construction and repairing the roads	2. Distribution of domestic fuel with low charge appropriate vehicles
Lack of secondary school for girls	Primary school	3. Establishing a gym with co-operation of the state and local people
Insufficient fuel	Distribution of fuel	
Unsanitary condition in village	Sanitation of the village environment	

socio-economic indices such as the crude unemployment rate, female employment rate as a proportion of local employment figures, and total family income before and after the project. Second, life-satisfaction and health-related quality-of-life measures compared with villages of similar population size and structure.[26,27] Third, impact on knowledge, attitude and practices of inhabitants in a standard framework and compared with similar rural areas.

Comments

Providing monetary resources for economically depressed rural areas to improve these deprived areas and provide sustained development is a universal challenge, particularly in less-developed areas of the world. Therefore, the preference of the Iranian government is to establish infrastructure facilities such as roads, health services, primary and middle school education,

Table 5 Boushehr—Bandar Genaveh (villages: Mohammad Salehi, Mal Ghaed and Shool.

Problems	Needs	Setting priorities
Income generation: Unemployment and poverty	Small-scale businesses such as plastic materials production factory, husbandry, filling natural liquid gas cylinder plan	1. Plastic material production (first phase) to produce slippers 2. Husbandry 3. Filling natural liquid gas cylinder plan
Health and social: Sanitary disposal	A vehicle for collection and disposal of waste	1. Vocational training; if this takes place, many young people will be trained and can get a job more easily
Lack of preschool playgroup	Nursery for children	2. Solid waste collection and disposal. This would be the first phase of the environmental sanitation project within the village
Vocational training	In several areas, such as computing, sewing, mechanics	3. Building a children's playground using local resources, construction materials and local nursery staff
Lack of recreational and cultural facilities	Library and gym	
Unsanitary condition of village environment	Environmental sanitation, repairing the roads and pathways	

electricity, drinking water and telecommunications, which fall within the national estate budget, while other small-scale facilities remain a local council responsibility. Failing to provide money to raise the productivity of rural areas, particularly deprived villages, leads to a progressive cycle of deterioration. How might this negative cycle be broken?

The answer, described in this paper, appears to be BDN, which has been tested in several deprived areas around the world, adapted for each unique local situation.[16] This will allow state agencies to release scarce financial resources for investing in outsized developmental projects that overlie and are possibly ignored in less-developed areas. Finding extra monetary resources, however, is essential to support and implement BDN projects. Various solutions have been proposed. For example, a 'revolving loan fund' was established in Arkansas, USA to facilitate access to healthcare facilities,[28] while special funds were made available to improve health services in Australia.[29]

Loan repayments have been consistently high, ranging from 75 to 95%.[21] Providing start-up capital, however, is not a straightforward issue, as a formidable bureaucracy has to be overcome to convince local and central government as well as contributory international agencies.

Community participation, targeting needs and priority setting are central to the BDN approach. In addition, financial resources might be directed to key fields that are constitutionally the responsibility of the state (such as education, healthcare provision, social security and transport) and may alleviate the unemployment crisis in deprived areas through income generation. Women were particularly keen to be involved at every stage, aiming not only for prestige roles within their communities but also for self-determination and self-reliance within their own households.

One of the inherent concepts in the BDN approach is the involvement of a wide range of organizations from different state and independent agencies under a single umbrella. Once initial reticence has been overcome and the project has been seen to make progress, enthusiasm generally becomes universal, to the benefit not only of those in underprivileged areas but also those sceptical about the concept of 'health impact assessment'.[13]

The process reported in this study should encourage other similar underprivileged localities in developing countries to adopt the BDN approach. It is not capable of resolving all problems and potential inequalities, partly because 'induced participation' marginalizes socially powerful groups such as women and non-government organizations, accentuating elite groups in the community. Even so, the simplicity of the overall plan described here facilitates wider application of the model, provided that there is political will to overcome bureaucratic obstacles. In time, BDN may involve less community participation.[30] 'Needs', 'satisfaction' and 'outcome' have momentous relationships with illness,[27,31,32] which could be generalized to the ordinary population.[33] As various BDN projects are completed, the extent to which outstanding needs have been met and socio-economic status has improved will have to be established.

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References

1. Asadi-Lari M, Packham C, Gray D. Need for redefining needs. *Health Qual Life Outcomes* 2003;**1**:34.
2. Maslow A. *Motivation and personality*. New York: Harper & Row; 1954.
3. Culyer A. Need—is a consensus possible? *J Med Ethics* 1998; **24**:77–80.
4. Lightfoot J. Identifying needs and setting priorities: issues of theory, policy and practice. *Health Soc Care Commun* 1995; **3**:105.
5. Parry-Jones B, Soulsby J. Needs-led assessment: the challenges and the reality. *Health Soc Care Commun* 2001;**9**: 414–28.
6. Asadi-Lari M, Packham C, Gray D. Unmet health needs in patients with coronary heart disease: implications and potential for improvement in caring services. *Health Qual Life Outcomes* 2003;**1**:26.
7. Wen KY, Gustafson DH. Need assessment for cancer patients and their families. *Health Qual Life Outcomes* 2004;**2**:11.
8. Tamburini M, Gangeri L, Brunelli C, et al. Assessment of hospitalised cancer patients' needs by the needs evaluation questionnaire. *Ann Oncol* 2000;**11**:31–7.
9. Bradshaw J. A taxonomy of social need. In: Mclachlan G, editor. *Problems and progress in medical care: essays on current research*. Oxford: Nuffield Provincial Hospital Trust; 1972.
10. Zuluaga BH. Implementation of the Zuluaga–Raysmith (Z–R) model for assessment of perceived basic human needs in home health clients and caregivers. *Public Health Nurs* 2000; **17**:317–24.
11. Family planning: a basic development need. *IPPF Open File* 1994:1.
12. Jordan J, Wright J. Making sense of health needs assessment. *Br J Gen Prac* 1997;**47**:695–6.

13. Krieger N, Northridge M, Gruskin S, et al. Assessing health impact assessment: multidisciplinary and international perspectives. *J Epidemiol Commun Health* 2003;**57**:659–62.
14. Streeten P. The distinctive features of a basic needs approach to development. *Development* 1997;**40**:49–60.
15. UNDP, UNESCO, UNFPA, UNICEF and WHO. *The 20/20 Initiative: Achieving Universal Access to Basic Social Services for Sustainable Human Development*. New York: UNICEF; 1994.
16. Abdullatif AA. Basic development needs approach in the eastern Mediterranean region. *East Mediterr Health J* 1999; **5**:168–76.
17. Heinonen T, Mercader M, Quianzon JL, Penera-Torralba M, Baluis L. Conceptualizing and applying a minimum basic needs approach in southern Philippines. *Health Policy Plan* 2000;**15**:194–206.
18. Asadi-Lari M, Sayyari AA, Akbari ME, Gray D. Public health improvements in Iran: lessons from the past 20 years. *Public Health* 2004;**118**(6):395–402.
19. Shadpour K. Primary health care networks in the Islamic Republic of Iran. *East Mediterr Health J* 2000;**6**:822–5.
20. *The basic development needs initiative: integrated community development in action*. Alexandria: World Health Organization Regional Office for the Eastern Mediterranean; 1998.
21. Sheikh MR. Basic development needs approach in the eastern Mediterranean region: from theory to practice. *East Mediterr Health J* 2000;**6**:766–74.
22. Wisner B. *Power and need in Africa: basic human needs*. London: Earthscan Publications; 1988.
23. Asadi-Lari M, Naghavi M, Sayyari AA. Epidemiological transition in the Iranian population during recent forty years; comparing various demographic indices in five provinces. *Ann Epidemiol* 2003;**13**:577.
24. Roudi F. Iran's revolutionary approach to family planning. *Popul Today* 1999;**27**(7):4–5.
25. Nasseri K, Sadrizadeh B, Malek-Afzali H, et al. Primary health care and immunisation in Iran. *Public Health* 1991;**105**: 229–38.
26. Aharony L, Strasser S. Patient satisfaction: what we know about and what we still need to explore. *Med Care Rev* 1993; **50**:49–79.
27. Asadi-Lari M, Packham C, Gray D. Patients' satisfaction and quality of life in coronary artery disease. *Health Qual Life Outcomes* 2003;**1**:57.
28. Stewart MK, Wojcik J, Felix H, Slayton D. Enhancing rural economic development: crafting a health care revolving loan fund. *J Health Care Poor Underserved* 2002;**13**: 425–42.
29. McDonald J, Brown L, Murphy A. Strengthening primary health care: building the capacity of rural communities to access health funding. *Aust J Rural Health* 2002;**10**:173–7.
30. Mehrotra S, Jarrett SW. Improving basic health service delivery in low-income countries: 'voice' to the poor. *Soc Sci Med* 2002;**54**:1685–90.
31. Asadi-Lari M, Tamburini M, Gray D. Patients' needs, satisfaction, and health-related quality of life: towards a comprehensive model. *Health Qual Life Outcomes* 2004; **2**:32.
32. Wiersma D, Van Busschbach J. Are needs and satisfaction of care associated with quality of life? An epidemiological survey among the severely mentally ill in the Netherlands *Eur Arch Psychiatry Clin Neurosci* 2001; **251**:239–46.
33. Bowling A. Assessing health needs and measuring patient satisfaction. *Nurs Times* 1992;**88**(31):31–4.